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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,333	05/24/2006	Shigeru Uzawa	AAO-0276	3189
23353 7590 04/17/2008 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036				
EXAMINER THOMAS, ERIC W				
ART UNIT 2831		PAPER NUMBER		
MAIL DATE 04/17/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/580,333

Applicant(s)

UZAWA ET AL.

Examiner

Eric Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date 5/06

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 13 objected to because of the following informalities:

Claim 13 recites the limitation "the synthetic polymer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 7, 10-11 are rejected under 35 U.S.C. 102(a) as being anticipated by Komatsu (JP 2004031983).

Komatsu discloses an electrolytic solution for use in an electrolytic capacitor comprising a solvent and a solute, wherein water accounts for 20 to 100 % by weight of the solvent (abstract) and the solute content is from 1.5 to 44 by weight (see paragraph

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60), wherein the electrolytic solution has a specific resistance at 30°C of $65\ \Omega\cdot\text{cm}$ or less (abstract).

Regarding claim 2, Komatsu discloses the solute is at least one solute selected from a carboxylic acid or a salt thereof and an inorganic acid or a salt thereof, and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelete forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination (see paragraph 60).

Regarding claims 3/1, 3/2, Komatsu discloses the content of water is from more than 75% by weight to 100% by weight based on the solvent.

Regarding claims 4/1, 4/2, Komatsu discloses the content of water is from more than 80% by weight to 100% by weight based on the solvent.

Regarding claims 5/1, 5/2, Komatsu discloses the content of water is from more than 90% by weight to 100% by weight based on the solvent.

Regarding claims 7/1, 7/2, Komatsu discloses the solvent comprises water and at least one organic solvent and the organic solvent is selected from the group of protonic organic solvents consisting of monohydric alcohols including methyl alcohol, ethyl alcohol, propyl alcohol and butyl alcohol, dihydric alcohols including ethylene glycol, diethylene glycol and triethylene glycol, and trihydric alcohols including glycerin, and the group of aprotic solvents consisting of gamma-butyrolactone, propylene carbonate and sulfolane (paragraph 60).

Regarding claim 10, Komatsu discloses the carboxylic acid or salt thereof is selected from the group consisting of formic acid, acetic acid, propionic acid, butyric acid, salicylic acid, borodisalicylic acid, nitrobenzoic acid, dinitrobenzoic acid, hydroxybenzoic acid, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, fumaric acid, maleic acid, phthalic acid, azelaic acid, sebacic acid, citric acid and hydroxybutyric acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 0.5 to 44% by weight based on the total amount of the electrolytic solution (see paragraph 60).

Regarding claim 11, Komatsu discloses the inorganic acid or salt thereof is selected from the group consisting of carbonic acid, hypophosphorous acid, phosphorous acid, phosphoric acid, boric acid and sulfamic acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 1 to 20% by weight based on the total amount of the electrolytic solution.

5. Claims 1-3, 7-11, 14-20, 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by KOMATSU et al. (JP 2000-173871).

Komatsu et al. disclose an electrolytic solution for use in an electrolytic capacitor comprising a solvent and a solute, wherein water accounts for 20 to 80% by weight of the solvent (abstract) and the solute content is from 1.5 to 44 by weight (see paragraph 18), wherein the electrolytic solution has a specific resistance at 30°C of 65 Ω *cm or less (table 2).

Regarding claim 2, Komatsu et al. disclose the solute is at least one solute selected from a carboxylic acid or a salt thereof and an inorganic acid or a salt thereof,

and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelete forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination (see paragraph 17).

Regarding claims 3/1, 3/2, Komatsu et al. disclose the content of water is from more than 75% by weight to 100% by weight based on the solvent (abstract).

Regarding claims 7/1, 7/2, Komatsu et al. disclose the solvent comprises water and at least one organic solvent and the organic solvent is selected from the group of protonic organic solvents consisting of monohydric alcohols including methyl alcohol, ethyl alcohol, propyl alcohol and butyl alcohol, dihydric alcohols including ethylene glycol, diethylene glycol and triethylene glycol, and trihydric alcohols including glycerin, and the group of aprotic solvents consisting of gamma-butyrolactone, propylene carbonate and sulfolane (paragraph 15).

Regarding claims 8/1, 8/2, Komatsu et al. disclose the total solute content is from 23.5 to 40 % by weight (paragraph 18).

Regarding claim 9/1, 9/2, Komatsu et al. disclose the total solute content is from 1.5 to 5 % by weight (paragraph 18).

Regarding claim 10, Komatsu et al. disclose the carboxylic acid or salt thereof is selected from the group consisting of formic acid, acetic acid, propionic acid, butyric acid, salicylic acid, borodisalicylic acid, nitrobenzoic acid, dinitrobenzoic acid, hydroxybenzoic acid, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, fumaric acid, maleic acid, phthalic acid, azelaic acid, sebacic acid, citric acid and

hydroxybutyric acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 0.5 to 44% by weight based on the total amount of the electrolytic solution (see paragraph 17-18).

Regarding claim 11, Komatsu et al. disclose the inorganic acid or salt thereof is selected from the group consisting of carbonic acid, hypophosphorous acid, phosphorous acid, phosphoric acid, boric acid and sulfamic acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 1 to 20% by weight based on the total amount of the electrolytic solution (see paragraph 17).

Regarding claim 14, Komatsu et al. disclose the nitro compound is selected from the group consisting of nitrophenol, dinitrophenol, nitrobenzoic acid, dinitrobenzoic acid, trinitrobenzoic acid, nitroanisole, nitroacetophenone, aminonitrobenzoic acid, nitrosalicylic acid and nitroguanidine, and a salt or derivative thereof, and the nitroso compound is selected from the group consisting of nitrosobenzoic acid, nitrosonaphthol, nitrosophenol and copperon, and a salt or derivative thereof (see paragraph 27).

Regarding claim 15, Komatsu et al. disclose the nitro compound and/or the nitroso compound is/are contained in the amount of 0.05 to 10% by weight based on the total amount of the electrolytic solution (see paragraph 27).

Regarding claim 16, Komatsu et al. disclose the chelate forming compound is formed from ethylenediaminetetraacetic acid (see paragraph 25).

Regarding claim 17, Komatsu et al. disclose the chelete forming compound is contained in the amount of 0.01 to 5% by weight based on the total amount of the electrolytic solution (see paragraph 25).

Regarding claim 18, Komatsu et al. disclose the saccharide is monosaccharide (see paragraph 20).

Regarding claim 19, Komatsu et al. disclose the saccharides are contained in the amount of 0.01 to 10% by weight based on the total amount of the electrolytic solution (see paragraph 21).

Regarding claim 20/1, 20/2, Komatsu et al. disclose the electrolytic solution of claims 1 or 2 is formed in an electrolytic capacitor comprising a capacitor element, a case containing the capacitor element, and a sealant with which the case is sealed, the capacitor element comprising a pair of electrode foils each comprising a dielectric, a separator for isolating the electrode foils from each other, and an electrolytic solution filled between the electrode foils.

Regarding claims 27/20/1, 27/20/2, Komatsu et al. disclose the capacitor is used at a temperature of -40 degrees C or higher (see tables).

Regarding claims 28/20/1, 28/20/2, Komatsu et al. disclose the capacitor is used at a temperature of -25 degrees C or higher (see tables).

6. Claims 1-5, 7, 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsu (US 6,349,028).

Komatsu discloses an electrolytic solution for use in an electrolytic capacitor comprising a solvent and a solute, wherein water accounts for 20 to 100 % by weight of the solvent (abstract) and the solute content is from 1.5 to 44 by weight (see paragraph 60), wherein the electrolytic solution has a specific resistance at 30°C of 65 Ω ·cm or less (abstract).

Regarding claim 2, Komatsu discloses the solute is at least one solute selected from a carboxylic acid or a salt thereof and an inorganic acid or a salt thereof, and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelete forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination (see paragraph 60).

Regarding claims 3/1, 3/2, Komatsu discloses the content of water is from more than 75% by weight to 100% by weight based on the solvent.

Regarding claims 4/1, 4/2, Komatsu discloses the content of water is from more than 80% by weight to 100% by weight based on the solvent.

Regarding claims 5/1, 5/2, Komatsu discloses the content of water is from more than 90% by weight to 100% by weight based on the solvent.

Regarding claims 7/1, 7/2, Komatsu discloses the solvent comprises water and at least one organic solvent and the organic solvent is selected from the group of protonic organic solvents consisting of monohydric alcohols including methyl alcohol, ethyl alcohol, propyl alcohol and butyl alcohol, dihydric alcohols including ethylene glycol, diethylene glycol and triethylene glycol, and trihydric alcohols including glycerin, and the

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group of aprotic solvents consisting of gamma-butyrolactone, propylene carbonate and sulfolane (paragraph 60).

Regarding claim 10, Komatsu discloses the carboxylic acid or salt thereof is selected from the group consisting of formic acid, acetic acid, propionic acid, butyric acid, salicylic acid, borodisalicylic acid, nitrobenzoic acid, dinitrobenzoic acid, hydroxybenzoic acid, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, fumaric acid, maleic acid, phthalic acid, azelaic acid, sebacic acid, citric acid and hydroxybutyric acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 0.5 to 44% by weight based on the total amount of the electrolytic solution (see paragraph 60).

Regarding claim 11, Komatsu discloses the inorganic acid or salt thereof is selected from the group consisting of carbonic acid, hypophosphorous acid, phosphorous acid, phosphoric acid, boric acid and sulfamic acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 1 to 20% by weight based on the total amount of the electrolytic solution.

7. Claims 1-3, 7, 10, 20, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by KOMATSU (US 6,349,028).

Komatsu discloses an electrolytic solution for use in an electrolytic capacitor comprising a solvent and a solute, wherein water accounts for 20 to 80% by weight of the solvent (col. 6 lines 60-67) and the solute content is from 1.5 to 44 by weight (see example 1), wherein the electrolytic solution has a specific resistance at 30°C of 65 $\Omega \cdot \text{cm}$ or less. Although Komatsu does not expressly state that the electrolytic solution

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has a specific resistance at 30°C of 65 Ω *cm or less, it is understood to be an inherent feature (when the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent)

Regarding claim 2, Komatsu discloses the solute is at least one solute selected from a carboxylic acid or a salt thereof and an inorganic acid or a salt thereof, and further comprises one or more compounds selected from a nitro compound, a nitroso compound or a salt thereof, a chelete forming compound or a salt thereof, saccharides, a phosphoric acid compound or a derivative thereof, a water-soluble polymer and a silane coupling agent alone or in combination (see col 7 lines 1-67, and col. 8 lines 1-47).

Regarding claims 3/1, 3/2, Komatsu discloses the content of water is from more than 75% by weight to 100% by weight based on the solvent (see col. 6 lines 60-67).

Regarding claims 7/1, 7/2, Komatsu discloses the solvent comprises water and at least one organic solvent and the organic solvent is selected from the group of protonic organic solvents consisting of monohydric alcohols including methyl alcohol, ethyl alcohol, propyl alcohol and butyl alcohol, dihydric alcohols including ethylene glycol, diethylene glycol and triethylene glycol, and trihydric alcohols including glycerin, and the group of aprotic solvents consisting of gamma-butyrolactone, propylene carbonate and sulfolane (see example 1).

Regarding claim 10, Komatsu discloses the carboxylic acid or salt thereof is selected from the group consisting of formic acid, acetic acid, propionic acid, butyric acid, salicylic acid, borodisalicylic acid, nitrobenzoic acid, dinitrobenzoic acid,

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hydroxybenzoic acid, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, fumaric acid, maleic acid, phthalic acid, azelaic acid, sebacic acid, citric acid and hydroxybutyric acid, and ammonium, sodium, potassium, amine and alkylammonium salts thereof, and is contained in the amount of 0.5 to 44% by weight based on the total amount of the electrolytic solution (see example 1).

Regarding claim 20/1, 20/2, Komatsu discloses the electrolytic solution of claims 1 or 2 is formed in an electrolytic capacitor comprising a capacitor element, a case containing the capacitor element, and a sealant with which the case is sealed, the capacitor element comprising a pair of electrode foils each comprising a dielectric, a separator for isolating the electrode foils from each other, and an electrolytic solution filled between the electrode foils.

Regarding claim 25, Komatsu discloses the sealant comprises a resin vulcanized isoprene-isobutylene rubber.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (US 6,288,889) in view of JP 2002-217067 ('067).

Regarding claims 12 and 13, Komatsu et al. disclose the claim invention except that a water soluble polymer is contained in the electrolyte. The water soluble polymer is a synthetic or natural polymer having a molecular weight of 100 to 2,000,000.

'067 teaches that adding polyacrylic acid (molecular weight of 100 to 2,000,000) to an electrolyte containing ethylene glycol improves the electrical properties of the capacitor.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the electrolyte of Komatsu et al. using a small amount of polyacrylic acid (molecular weight 100 to 2,000,000), since such a modification would lower specific resistance of the capacitor.

11. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over KOMATSU et al. (JP 2000-173871) in view of Hayashi et al. (EP 0569938).

Regarding claim 21, Komatsu et al. disclose the claimed invention except that the separator of the capacitor having a density of 0.5 or less.

Hayashi et al. teach the use of a separator for an electrolytic capacitor, wherein the density of the capacitor is 0.5 or less (see abstract).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hayashi et al. in the capacitor of Komatsu et al., since such a modification would form the capacitor with a separator having excellent workability.

Regarding claim 22, Hayashi et al. teach that the separator comprises fibers fixed with a binder soluble in the electrolytic solution.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2000-173871) in view of JP 2000-150322 ('322).

Komatsu et al. disclose the claim invention except that the case is made of a non-treated aluminum having purity of 99.0% or higher.

'322 teaches that 1100 grade aluminum is commonly used in the fabrication of electrolytic capacitor housings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the housing from a 1100 grade aluminum material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over KOMATSU et al. (JP 2000-173871) in view of Takeishi et al. (US 6,031,713).

Regarding claim 24, Komatsu et al. disclose in the claimed invention except that the case is made of an aluminum alloy containing manganese and/or magnesium.

Takeishi et al. teach that electrolytic capacitor housings formed from an aluminum alloy containing manganese are stronger than conventional aluminum housings.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the capacitor casing of Komatsu et al. using an aluminum alloy containing manganese as taught by Takeishi et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over KOMATSU et al. (JP 2000-173871) in view of Poole (US 4,037,142).

Komatsu et al. disclose the claimed invention except that the external terminals are formed from copper wire.

Poole teaches the use of copper wires used in the fabrication of an electrolytic capacitor.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the external terminals of Pool et al. in the capacitor of

Komastu et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Thomas/

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Primary Examiner, Art Unit 2831